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# Introduction



**Exercises for Day 1.** Read the entire chapter. You may read it fairly quickly on this first reading. Don't expect to understand everything you read. Try only to get a general idea of what the chapter is about. Next, read the beginning sections of the introduction: "The History of Logic" and "The Two Main Branches of Logic." Read these sections carefully and try to fully understand them.

1. Based on what you have read in this chapter, what is the definition of 'logic'?  
Logic is the science of right thinking.  
\_\_\_\_\_
2. Who was called the "father of logic"? Aristotle  
\_\_\_\_\_
3. Who laid the groundwork for modern symbolic logic? Chrysippus  
\_\_\_\_\_
4. Give the name of one philosopher who made advances in symbolic logic.  
Gottfreid Wilhelm Leibniz  
\_\_\_\_\_
5. Who pioneered the theories about induction that we study today? John Stuart Mill  
\_\_\_\_\_
6. Give the names of three people whose names are associated with modern kinds of mathematical logic.
  1. Gottlob Frege  
\_\_\_\_\_
  2. Alfred North Whitehead  
\_\_\_\_\_
  3. Bertrand Russell  
\_\_\_\_\_
7. Give the names of the two main branches of logic.
  1. formal or "minor" logic  
\_\_\_\_\_
  2. material or "major" logic  
\_\_\_\_\_
8. Explain the first of the main branches of logic (in Question 7), and describe it in your own words.  
Formal logic is interested in the form or structure of reasoning.  
\_\_\_\_\_  
\_\_\_\_\_
9. Explain the second of the main branches of logic (in Question 7), and describe it in your own words.  
Material logic is concerned with the content of argumentation. It deals with the truth of the terms and the propositions in an argument.  
\_\_\_\_\_  
\_\_\_\_\_
10. Indicate whether the following statements are true or false:
  - F a. The purpose of formal logic is to discover truth.  
(The purpose of formal logic is to lead us from one truth to another.)
  - F b. It is necessary to have logic in order to discover truth.  
(Formal logic is useful only if we already have truths with which to use logic.)
  - T c. Logic leads us from one truth to another.
  - T d. A statement can be true or false.
  - F e. A statement can be valid or invalid.  
(Statements can only be true or false.)
  - F f. An argument can be true or false.  
(Arguments can only be valid or invalid.)



**Exercises for Day 3. Read “Term” and “Proposition.”**

17. Each of these logical processes (in Question 16 above) originates in a mental act and manifests itself in the form of a verbal expression.

18. What is the mental act involved in the first of the three kinds of logical processes?  
Simple apprehension.

19. What is the verbal expression connected to this mental act (in Question 18)? Term

20. What occurs in our minds when we have a simple apprehension?  
We form in our minds a concept of something.

21. If you think of this book and have the concept in your mind, you are having a simple apprehension. What is the term you use to verbally express this particular simple apprehension?  
Book (Term would also be acceptable.)

22. Name the terms included in the argument in Question 15 above.  
Men; mortal; and Socrates

23. What does each one of these terms (in Question 22) represent?  
A concept

24. What is the mental act involved in the second of the three kinds of logical processes?  
Judgment

25. What is the verbal expression connected to this mental act (in Question 24)?  
Proposition

26. What occurs in our minds when we perform a judgment?  
We perform a judgment any time we think in our minds that something is something else (which we call affirmation), and also when we think that something is not something else (which we call denial).

27. If you think that this book is boring by affirming in your mind that this is so, your mind is performing a judgment. What is the term you use to verbally express this judgment?  
Proposition

28. Indicate the propositions included in the argument in Question 15 above.  
“All men are mortal”; “Socrates is a man”; and “Socrates is mortal.” (You do not have to include the word ‘therefore’ in the last proposition.)

29. What does each one of these propositions (in Question 28) represent?  
A judgment

**Exercises for Day 4. Read “Syllogism” and “Summary.” Read them carefully.**

30. What is the mental act involved in the third of the three kinds of logical processes?

Deductive inference

31. What is the verbal expression connected to this mental act (in Question 30)?

Syllogism

32. Describe in no less than one and no more than three sentences what occurs in our minds when we engage in deductive inference.

A deductive inference occurs when we make the logical connections in our minds between the terms in the argument in a way that shows us that the conclusion either follows or does not follow from the premises. (or something similar)

33. If you think that because all books are boring and that this is a book, and that therefore this book is boring, your mind engaged in deductive inference. What is the term you use to verbally express this deductive inference?

Syllogism

34. Fill out the chart below, listing the mental acts and their corresponding verbal expressions in the order in which we have covered them:

Mental Act	Verbal Expression
Simple Apprehension	Term
Judgment	Proposition
Deductive Inference	Syllogism

35. Draw a line to indicate which action best describes what each mental act is like:

